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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/595,179	08/21/2006	Guillermo C. Bazan	1279-454	3968

62836 7590 05/10/2012

BERLINER & ASSOCIATES
555 WEST FIFTH STREET
31ST FLOOR
LOS ANGELES, CA 90013

EXAMINER	
WALTERS JR, ROBERT S	
ART UNIT	PAPER NUMBER
1717	
MAIL DATE	DELIVERY MODE
05/10/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/595,179	BAZAN ET AL.	
	Examiner	Art Unit	
	ROBERT S. WALTERS JR	1717	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2012*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-20* is/are pending in the application.

5a) Of the above claim(s) *10 and 13-20* is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-9,11 and 12* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/14/2012*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Status of Application

Claims 1-20 are pending. Claims 10 and 13-20 are withdrawn. Claims 1-9, 11 and 12 are presented for examination.

Response to Arguments

Applicant's arguments filed 3/7/2012 have been fully considered but they are not persuasive. The applicant argues that claims 1, 2, 6, 7, 11 and 12 are not anticipated by Sirringhaus. Applicant contends that the PEDOT:PSS of Sirringhaus is not a conjugated polymer comprising polar groups as pendant solubilizing groups linked to the conjugated polymer. However, the examiner disagrees with this argument. As an initial matter it should be noted that the term "linked" has been defined by applicants to encompass direct as well as indirect connection, attachment, linkage or conjugation (see applicant's specification at page 5, lines 9-11). The claims as amended now recite "wherein the conjugated polymer comprises polar groups as pendant solubilizing groups linked to the conjugated polymer". Therefore, the examiner maintains that PEDOT:PSS is a conjugated polymer meeting this limitation. As noted by applicants in their Arguments, PEDOT is a conjugated polymer. Furthermore, PSS contains sulfonic acid groups (pendant polar groups), which are then “linked” to this conjugated polymer through an indirect connection via the electrostatic interaction between the PEDOT and PSS. It appears applicant intends to claim that the pendant polar groups are covalently bonded to the conjugated polymer. However, the claims do not make clear this distinction, as the term "linked"

allows for indirect connection which would be interpreted to encompass attachment through electrostatic bonding. Therefore, the examiner maintains that Sirringhaus teaches the limitation of a conjugated polymer comprising polar groups as pendant solubilizing groups linked to the conjugated polymer.

Applicant additionally argues that the claims are not obvious over Sirringhaus in view of Hsu or Yu for the same reasons. However, the examiner maintains the rejections for the same reasons as presented above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 6, 7, 11 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Sirringhaus et al. (U.S. PGPUB No. 2003/0059975).

Regarding claims 1, 2, 6, 7, 11 and 12, Sirringhaus teaches a method of forming adjacent layers of conjugated polymer on a substrate comprising:

providing a substrate not soluble in water (0105-0106);

providing an aqueous solution of a first cationic conjugated polymer comprising polar groups as pendant solubilizing functionalities linked to the conjugated polymer, PEDOT:PSS

(0105, note that the PEDOT portion is conjugated and carries positive charges and that PEDOT:PSS has sulfonic acid groups, which are polar and act as solubilizing groups linked, as defined by applicant's specification, see Response to Arguments above, to the conjugated PEDOT through electrostatic interactions of the two polymers);

providing a second solution comprising a second conjugated polymer, F8T2, in a different solvent that the PEDOT:PSS is insoluble in (0106);

depositing a first layer of PEDOT:PSS from the aqueous solution onto a rigid glass substrate by inkjet printing and then removing the solvent by evaporation (0106);

then depositing a layer of the second solution onto the first layer and removing the solvent.

Sirringhaus additionally teaches that the substrate may be flexible (0184) and that the final products can be light emitting diode displays (0195). Sirringhaus teaches all the critical limitations of claims 1, 2, 6, 7, 11 and 12, therefore Sirringhaus anticipates the claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sirringhaus in view of Hsu (U.S. PGPUB No. 2003/0222250).

Regarding claim 3, Sirringhaus teaches all the limitations of claim 1, but fails to teach the inclusion of a detergent. However, Hsu teaches a method of preparing light-emitting diodes (abstract) by preparing a mixture comprising an electrically conducting polymer and a surfactant (abstract, note that this is equivalent to a detergent). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sirringhaus' method by including a detergent in the solution. One would have been motivated to make this modification as Hsu teaches that the inclusion of a surfactant facilitates coating of the polymer, improves device performance, and facilitates the use of flexible substrates (0011).

3. Claims 4, 5, 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sirringhaus in view of Yu et al. (U.S. PGPUB No. 2004/0094768).

Regarding claims 4, 5, 8 and 9, Sirringhaus teaches all the limitations of claims 1 and 6, but fails to explicitly teach applying the first solution by spin-casting and further fails to teach the substrate being a film. However, Yu teaches a method for making PLED's (abstract and 0059) by applying polymers, such as PEDOT doped with PSS (0058), by drop-casting, spin-casting or ink jet printing (0058) to substrates that can be electrodes, flexible, rigid, or films (0054). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sirringhaus' method by applying their polymer materials by spin-casting. One would have been motivated to make this modification as one having ordinary skill in the art at the time of the invention could have substituted spin-casting for ink jet printing with a reasonable expectation of success (particularly given that Yu actually teaches spin-casting as an alternative method in a group that includes ink jet printing for depositing the same polymer utilized in Sirringhaus' process), and the predictable result of providing a PEDOT:PSS coated substrate. Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sirringhaus' method by substituting a film substrate for Sirringhaus' substrates. One would have been motivated to make this modification as one having ordinary skill in the art at the time of the invention could have substituted a film for Sirringhaus' substrates with a reasonable expectation of success (particularly given that Yu actually teaches films as alternative substrates in a group that includes rigid and flexible substrates for application

of the same polymer utilized in Sirringhaus' process), and the predictable result of providing a PEDOT:PSS coated substrate.

Conclusion

Claims 1-20 are pending.

Claims 10 and 13-20 are withdrawn.

Claims 1-9, 11 and 12 are rejected.

No claim is allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ROBERT S. WALTERS JR whose telephone number is (571)270-5351. The examiner can normally be reached on Monday-Thursday, 9:00am to 7:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on (571)272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ROBERT S. WALTERS JR/
May 6, 2012
Examiner, Art Unit 1717